

REMARKS

This is in response to the Office Action that was mailed on October 19, 2005. Claim 1 is amended to more idiomatically define the presently claimed high density detergent compositions. Claims 2 and 4 are cancelled, without prejudice, and the dependencies of various dependent claims is adjusted accordingly. Claim 3 is recast in independent form. New claim 16 is based upon original claims 1 and 6 and upon disclosure including that in lines 2-13 on page 7 of the specification. No new matter is introduced by this Amendment. Claims 1, 3, 5, 8, and 12-16 are pending in the application.

Interview

Applicants wish to express their appreciation to Examiner Douyon for the courtesies extended to their representative, Richard Gallagher, during a telephonic discussion on 8 February 2006. Examiner Douyon had previously reviewed an informal copy of the present Amendment. In the course of the 8 February 2006 telephonic discussion, Examiner Douyon indicated that the present Amendment would overcome all of the rejections that are currently of record.

The invention

The base detergent granules of claim 1 herein have particular particle size profiles. To visualize the significance of particle size profiles that characterize the compositions of the present invention, the Examiner's attention is respectfully drawn to Table 2 (specification page 41). A portion of the data from Table 2 is given below:

	Ex. 1	Ex. 2	Ex. 3
1410-2000 μm	0.00	0.01	0.00
1000-1410 μm	0.00	0.02	0.00
0710-1000 μm	0.00	0.06	0.00
0500-0710 μm	0.01	0.07	0.02
0355-0500 μm	0.13	0.16	0.07
0250-0355 μm	0.40	0.40	0.14
0180-0250 μm	0.40	0.18	0.28
0125-0180 μm	0.04	0.08	0.33

Thus, for instance, of the particles in the Example 1 composition, 1% have a size in the range of 500-710 μm , while 40% have a size in the range of 180-250 μm . In contrast, of the particles in the Example 2 composition, 7% have a size in the range of 500-710 μm , while only 18% have a size in the range of 180-250 μm .

As pointed out previously, Applicants are not claiming a detergent composition having “an average particle size of about 400 microns” or any other such broad-based particle size measurement. Instead, the present claims are directed to detergent compositions that have the recited *relationship* between mass base frequency W_i and dissolving rate V_i specified in the claims. As explained in detail in the specification, the mass base frequency/dissolving rate relationship of the claimed compositions provides detergent compositions having unexpectedly superior properties.

The prior art of record fails to teach or suggest that the specified relationship of properties in a detergent composition can have any impact on the performance of the composition. It goes without saying that the prior art does not lead those of ordinary skill in the art to the novel detergent compositions having the particle size profiles required by the present claims. It is also noted that the teachings and compositions of Nakamura do not arrive at the advantageous effects provided by the present invention, which is clearly shown by way of comparative testing in the 37 CFR 1.132 Declaration of Mr. Teruo Kubota, was made of record in this application on August 2, 2005.

The Kubota Declaration establishes that significant and unexpected benefits are provided by the mass base frequency and dissolving rate relationship recited in the claims of this application. In the Declaration, base detergent granules were prepared in accordance with Preparative Examples 1-4 of the application. Portions of the base detergent granules from each of Preparative Examples 1-4 were used as comparative examples in the Declaration. The “before classification” and the “after classification” particles were subjected to Evaluation 1 (dissolubility of detergent), Evaluation 2 (dispersibility of detergent), Evaluation 3 (detergency of detergent), and Evaluation 4 (hand-washing dissolution). The tests are described in detail on pages 26-29 of the specification.

In Evaluation 1, the present invention improved washing machine dissolubility by at least two grades (the grades are explained on page 26 of the specification), from D to A in Example 1, from D to B in Example 5, from D to B in Example 8, and from C to A in Example 10. In Evaluation 4, the present invention provides improved hand-washing dissolubility. Specifically, the adjusted particle size profile granules of Example 1 take only 17% as much time to dissolve as do the unadjusted particles of Preparative Example 1. The adjusted particle size profile granules of Example 5 take only 32% as much time to dissolve as do the unadjusted particles of Preparative Example 2. The adjusted particle size profile granules of Example 8 take only 28% as much time to dissolve as do the unadjusted particles of Preparative Example 3. And the adjusted particle size profile granules of Example 10 take only 24% as much time to dissolve as do the unadjusted particles of Preparative Example 4.

Accordingly, the Kubota Declaration under 37 CFR 1.132 provides clear evidence that the mass base frequency/dissolving rate relationship which characterizes the presently claimed compositions provides those compositions with unexpected beneficially improved dissolution properties.

Claim Rejections – Nakamura

Claims 1, 3, 5-7, and 12-15 were rejected under 35 U.S.C. §102(b) as being anticipated by, or under 35 U.S.C. §103(a) as being unpatentable over, US 4,970,017 (Nakamura). The rejection is respectfully traversed.

In their description of the present invention in the paragraph bridging pages 14-15 of the specification, Applicants teach that it is preferable that the content of the coarse granules in the presently claimed detergent compositions is small. They go on to explain, e.g., that “the mass base frequency of the classified granules having a particle size of 710 μm or more and less than 1000 μm is preferably 0.1 or less”. Applicants teach further that “the detergent composition of the present invention has an average particle size of preferably from 150 μm to 500 μm ”. Specification, page 15, lines 6-8.

Independent claim 1 herein requires that “a mass base frequency of the classified granules having a size of more than 710 μm ... is 0.1 or less”. The Examiner states that

Nakamura teaches a particle size distribution that includes “55% residue in the 10-24 mesh (2.00 mm to about 710 μm) sieve”. Thus, at least 55% of the particles in Nakamura are larger than about 710 μm , while in the present invention only a tiny percentage of the particles are larger than 710 μm .

In any case, Nakamura fails to teach or suggest any detergent composition that “has a total summation of a product of a mass base frequency W_i and a dissolving rate V_i which satisfies the following formula (A):

$$\Sigma(W_i \cdot V_i) \geq 95\% \quad (\text{A})$$

of each group of classified granules obtained by classifying detergent granules by using a classifier”. It goes without saying that Nakamura fails to teach or suggest detergent compositions with such beneficial properties as improved washing machine dissolubility.

Withdrawal of the rejection of record over the Nakamura reference is clearly in order, and is respectfully solicited.

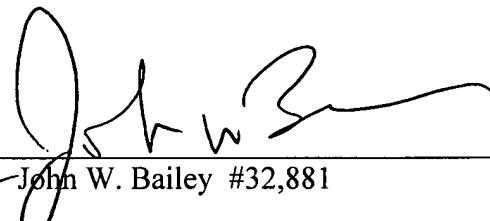
Claim Rejections – Joshi

Claims 2, 4, and 13 were rejected under 35 U.S.C. §102(b) as being anticipated by, or under 35 U.S.C. §103(a) as being unpatentable over, US 4,549,977 (Joshi). Claims 5-8, 12, 14, and 15 were rejected under 35 U.S.C. §103(a) alone as being unpatentable Joshi. The rejections over Joshi are rendered moot by the present Amendment.

If there are any questions concerning the present application, the Examiner is respectfully requested to contact Richard Gallagher (Reg. No. 28,781) at (703) 205-8008.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), the Applicants hereby petition for an extension of one (1) month to February 10, 2006, in which to file a reply to the Office Action. The required fee of \$120 is enclosed herewith.

Respectfully submitted,

By 
John W. Bailey #32,881

BIRCH, STEWART, KOLASCH & BIRCH, LLP
P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

JWB/RG/mao